It is concluded that the friction force is not directly dependent on the normal force but only indirectly, inasmuch as the normal force determines the size of the friction area. However, if the size of the friction area cannot change with the magnitude of the normal force, the friction force will no longer depend on the normal load. It can be seen from the data of Table 2 that the specific friction force does not depend on the width of the land and is approximately equal to the shear strength of the machined metal. The shear strength was determined by means of a press, a sketch of which is shown in Fig 9, p 42. The following conclusions are arrived at:
1) The process of external friction of pure metallic surfaces consists mainly of plastic shear taking place in the relatively thin surface layers of the rubbing pairs along areas, the magnitude of which is generally a function of the normal component of the load.
2) The main factor which determines the friction force is the real area of friction. The friction will be dependent on the normal force only as long as this normal force determines the size of the real area of friction. However,

Investigation of the Dependence of the Friction Force on the Real Area of Friction and the Normal Load

if this area of friction cannot change as a result of changes in the normal load, the friction force will no longer be dependent on the normal load.
3) The real area of friction is the area along which the process of shear develops during friction. If the real area of friction is correctly evaluated, the specific friction force will equal the shear strength of the weaker member of the rubbing pair in which the shear is localised.

Card 6/6 There are 9 figures, 3 tables and 12 references, 11 of which are Soviet, 1 English.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, Ac. Sc., USSSR)

SUBMITTED: May 4, 1958 (Initially)
August 25, 1958 (After revision)

YEPIFANOV, G.I.

Study of the physicomechanical nature of the lubricating action of boundary films. Izv.vys.uchob.zav.; fiz. no.3:3-11 '59.
(MIRA 12:10)

1. Moskovskiy vecherniy mashinostroitel'nyy institut.
(Friction)

AUTHORS: Glagolev, N.I. and Yepifanov, G.I. SOV/170-59-3-4/20

TITLE: Investigation of the Kinetics of Formation of a Hardened Layer During the Surface Cold Hardening of Metals (Issledovaniye kinetiki formirovaniya uprochnennogo sloya pri poverkhnostnom naklepe metallov)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 3, pp 29-35 (USSR)

ABSTRACT: Surface cold hardening plays now an important part in modern machine-building as it leads to increasing fatigue strength of machine parts, decreasing sensitivity to surface imperfections, higher resistance ability with respect to corrosion, adsorption effects, etc. Although many investigations dealt with structural and mechanical changes arising after cold hardening, the role of physico-chemical interaction of the metal subjected to cold hardening with the surrounding media has not been studied thus far. The authors undertook to investigate the role of physico-chemical factors in the run of this process and in the formation of the hardened layer. The methods used in the previous investigations by Lyubimova et al. [Ref. 2] were employed also by the authors for studying the kinetics of this formation. The cold hardening was performed with a roller which was pressed to the surface of an iron sample by a normal load of 4 and, in other experiments, of 8 kg. The microhardness of the formed depressions was measured with a PMT-3 device. The results of

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Investigation of the Kinetics of Formation of a Hardened Layer During the Surface Cold Hardening of Metals

experiments are represented by the curves in which the values of microhardness are plotted versus the number of flattenings made by the roller. The analysis of these curves makes it possible to qualitatively understand the kinetics of the process of cold hardening. The surface layer is hardened with the increasing number of flattenings up to a certain maximum; then the microhardness falls down and rises again. Sometimes there are 2 peaks on the curve. The authors interpret this phenomenon by a hypothesis that the surface hardened layer is periodically transformed into a glass-like substance which becomes brittle and is destroyed by the subsequent flattenings of the roller. The application of some active lubricants has a positive effect on the formation of the layer. It considerably accelerates the process of plastic deformation of the surface in the first stages of formation of the layer, and considerably heightens its mechanical properties in the successive stages of its formation as the microhardness attains a value of about 400 kg/sq mm. This indicates that the surface layer interacts in some way with the active media, since the maximum hardness of iron which can be obtained with ordinary methods

Investigation of the Kinetics of Formation of a Hardened Layer During the Surface Cold Hardening of Metals

of cold hardening amounts only to half of this value. The data available at present do not permit to decide the question on the nature of the hardened layer formed in the presence of the active media.
There are 2 graphs, 1 diagram, 1 set of microphotos and 3 Soviet references.

ASSOCIATIONS: Mashinostroitel'nyy institut (Machine-Construction Institute), Moscow. Pedagogicheskiy institut imeni L.N. Tolstogo (Pedagogical Institute imeni L.N. Tolstoy), Tula

~~5(4)~~ 15.6000 66177

AUTHORS: Avetisyan, I. S., Yepifanov, G. I. SOV/20-128-5-31/67

TITLE: The Effect of Surface-active Lubricants on Shear Strength in Friction

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 5, pp 973-976 (USSR)

ABSTRACT: The coefficients of friction are primarily determined by the shear strength of the weaker material of the two bodies rubbing each other and by the entire surface formed in friction. When the friction surface is coated with a thin solid film ($\sim 0.1\mu$) of low shear strength (graphite, soft plastic metals, etc), the shear is shifted from the surface of the rubbing bodies into the film. Herefrom it follows that shear component f_o of friction must be equal to the shear strength of the film material. This was confirmed by investigations of the lubricating action of graphite, tin, lead, cadmium, zinc, and copper films on steel surfaces. The authors then investigated the influence exerted by solid and liquid organic lubricants. Experiments were made by means of a hemispherical slider of hardened steel (diameter = 12 mm, perpendicular stress = 12.5 kg for Pb-, Cd-, and Zn-surfaces,

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The Effect of Surface-active Lubricants on Shear Strength in Friction SOV/20-128-5-31/67

25 kg for Al- and Sn-surfaces, 50 kg for Fe- and Cu-surfaces, and 62.5 kg for surfaces of the EI-437 alloy). In the first series of experiments the authors investigated the behavior of paraffin, cetyl alcohol, and palmitic acid. Results (Table 1) indicate that shear component f_c is similarly reduced to about 1:60 for the three substances. The same applies to the coefficients of friction μ which are reduced to 1:20 approximately. Accordingly, there is no difference between apolar paraffin and the surface-active substances cetyl alcohol and palmitic acid so that the lubricating action cannot be explained by the formation of limit phases. The effect of these solid organic lubricants is attributed to the shielding of the friction surfaces. The friction surfaces of thick layers of solid organic lubricants are hardly plasticized by adsorption. When the layer thickness is, however, reduced within the range of thinnest boundary layers, plasticizing probably plays a decisive part. Oleic acid appeared to be less effective than palmitic acid though the carbon chains of both compounds are almost equally long since the friction surfaces are insufficiently shielded by liquid oleic acid. At high pressure, however, when the formation of boundary layers becomes important, liquid oleic acid

The Effect of Surface-active Lubricants on Shear Strength SOV/20-128-5-31/67
in Friction

appeared to be more effective than solid stearic acid as shown by data of reference 8. In the second series of experiments the authors investigated the lubricating action of liquid apolar hydrocarbons of the aliphatic series (hexane up to cetane) and their derivatives, i.e. acids (acetic acid up to pelargonic acid) and alcohols (methyl alcohol up to decyl alcohol)(Table 2). Liquid hydrocarbons and their derivatives exhibited considerably weaker lubricating properties than the boundary films of solid hydrocarbons and their derivatives. Furthermore, the lubricity of liquid compounds depended on their polarity, attained a maximum in acids, dropped in alcohols, and was the least in apolar hydrocarbons. Figure 1 shows that shear component and coefficient of friction drop with increasing length of the carbon chain. Besides, the amount of the shear component was greatly dependent on the mechanical properties of the rubbing substances. Herefrom it is concluded that besides the shielding of friction surfaces, plasticizing by adsorption acquires greatest importance for liquid lubricants in contrast with solid ones. There are 1 figure, 2 tables, and 9 Soviet references.

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66177

The Effect of Surface-active Lubricants on Shear Strength in Friction SOV/20-128-5-31/67

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

PRESENTED: May 18, 1959 by P.A. Rebinder, Academician

SUBMITTED: April 27, 1959

Card 4/4

Yenifanov, G. I., and Minayev, N. I.

"Investigation of Friction as Resistance to the Displacement of Thin Surface Layers of Solid Bodies" p. 50

Sulhoye i granichnoye treniye. Friktsionnyye materialy (Dry and Boundary Friction. Friction Materials) Moscow, Izd-vo AN SSSR, 1960. 302 p. Errata slip inserted. 2,500 copies printed. (Series: Its: Trudy, v. 5)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: S. G. Tikhomirova.

The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines, April 9-15, 1958.

Yevfanov, G. I., and Avetisyan, I. S.

"Mechanism of the Lubricating Action of Boundary Films" p. 170

Sukhoye i granichnoye treniye. Friktsionnyye materialy (Dry and Boundary Friction. Friction Materials) Moscow, Izd-vo AN SSSR, 1960. 302 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 9)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: S. G. Tikhomirova.

The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines, April 9-15, 1957.

YEPIFANOV, G.I.

Role of adhesion in the formation of the friction force of clean surfaces. Dokl.AN SSSR 133 no.2:349-351 Jl '60. (MIRA 13:7)

1. Institut fizicheskoy khimii Akademii nauk SSSR. Predstavleno akademikom P.A.Rebinderom.
(Adhesion) (Friction)

85421

15.7700 2109, 1147, 1311

S/190/60/002/011/018/027
B004/B060

AUTHORS: Sanzharovskiy, A. T., Yepifanov, G. I.

TITLE: Internal Stresses in Coatings. II. Experimental Methods of Studying Internal Stresses in Polymer- and Lacquer-and-dye Coatings

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11, pp. 1703 - 1708

TEXT: The authors' aim was the experimental investigation of the internal stresses appearing in polymer- and lacquer-dye films applied to solid bases. Two methods are described in the article under consideration. 1) Measurement of deviation h of the free end of a cantilevered base under the effect of stress σ caused by shrinkage of the coating. The following equation has been derived for this case in a previous paper (Ref.1):

$\sigma = hE_1 t^3/3l^2(t + \Delta t)\Delta t$ (3), where E_1 denotes the modulus of elasticity of the base, l is the base length, t its thickness, and Δt the thickness

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Internal Stresses in Coatings. II. Experimental Methods of Studying Internal Stresses in Polymer-, Lacquer-and-dye. Coatings

S/190/60/002/011/018/027
B004/B060

of the coating. The measurement of h is described. The samples are cantilevered in such a way that the distance between a lamella and the free end of the base can be measured by the micrometer screw beneath the microscope. A particular arrangement, in which the sample is placed in a chamber with glass windows is described for measurements at higher temperatures and degrees of moistness, in vacuum, and in different media. The sensitivity of this method for steel bases is 0.78 kg/cm^2, for copper bases 0.39 kg/cm^2. 2) Tensimetric method. A wire gage and d.c.-measuring bridge are used to measure the changes in resistance on a flexure of the base on its noncoated side due to internal stress. Equation $\sigma = 4E_1 t^2 I_g (R_g + R)/kIR(2t + 3\Delta t)\Delta t$ (7) is found at a constant current strength I, measured by a milliamperemeter, of the diagonal current, measured by a galvanometer or a loop oscilloscope, caused by a perturbation of equilibrium in the bridge, a resistance R of the gage, R_g of the galvanometer. For a sensitivity k of the gage equal to

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85421

Internal Stresses in Coatings. II. Experimental Methods of Studying Internal Stresses in Polymer-, Lacquer-and-dye Coatings

S/190/60/002/011/018/027
B004/B060

200 ohms, t = 0.2 mm, Δt = 30 μ, R_g = 500 ohms, the sensitivity of this method was 3.8 kg/cm^2 for steel bases, and 1.9 kg/cm^2 for copper bases. There are 7 figures and 2 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR)

SUBMITTED: May 11, 1960

X

Card 3/3

S/190/60/002/011/019/027
B004/B060

AUTHORS: Sanzharovskiy, A. T., Yepifanov, G. I.

TITLE: Internal Stresses in Coatings. III. Study of Internal Stresses in Films of Gelatin and Acetyl Cellulose Applied to Solid Bases

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11, pp. 1709 - 1714

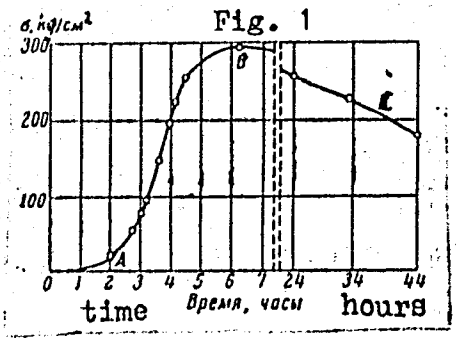
TEXT: In previous investigations (Refs. 1,2) the authors have worked out methods of calculating and experimentally studying the internal stresses appearing in films made of polymers of lacquer-dye coatings on solid bases. In the work under consideration they studied the internal stresses of gelatin- and acetyl cellulose films applied onto 120 mm long, 10-15 mm wide, 0.2-1.5 mm thick lamellas. Deviation h of the free end of the cantilevered lamellas was measured. The stress was calculated by the following equation:

$\sigma = hE_1 t^3/3l^2(t + \Delta t)\Delta t$. Here, E_1 denotes the modulus of elasticity of

the base, l is its length, t its thickness, and Δt the thickness of the film. The investigation also covered the kinetics of the increase of σ during drying of the film, the effect of the solution concentration, of the thickness of the film applied, and of the base material (carbon steel, stainless steel, glass, brass, copper).

Fig. 1 shows the change of σ as a function of time in a 5% gelatin solution film applied onto the steel base. Section OA of the curve corresponds to the evaporation of the solvent without noticeable inner stresses. This is followed by a strong increase of σ in the section AB, and finally, either due to relaxation or detaching of the film from the base, a drop of σ in the section BC. Tests made with 5, 10, and 20% gelatin solution showed σ to be independent of concentration and film thickness, and to

Fig. 1



amount to (270±20) kg/cm^2 for gelatin, and approximately 65 kg/cm^2 for acetyl cellulose. The section OA of the curve becomes smaller with increasing gelatin concentration, and larger with increasing film thickness. Films with thicknesses > 0.1 mm detach from the base before σ has attained the maximum value. Tests made with gelatin films on several base materials showed no effect to come from the latter. σ was, on an average, 270 kg/cm^2. The existence of internal stresses decreases the stability and durability of films. A determination of the tensile strength of films indicated 1100 kg/cm^2 for gelatin, about 88 kg/cm^2 for acetyl cellulose. The stability of gelatin films on a base thus drops to 25%, that of acetyl cellulose films to 74%. There are 4 figures and 4 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR)

SUBMITTED: May 11, 1960

Internal Stresses in Coatings. III. Study of Internal Stresses in Films of Gelatin and Acetyl Cellulose Applied to Solid Bases

S/190/60/002/011/019/027
B004/B060

Legend to Fig. 1: Kinetics of the change of internal stresses in a gelatin film applied onto steel base.

Card 4/4

15.6000 1583 1404

S/139/61/000/001/017/018
E073/E535

AUTHORS: Avetisyan, I.S. and Yepifanov, G. I.

TITLE: Investigation of the Lubrication Properties of Molecular Layers of Organic Lubricants

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1961, No.1, pp.171-172

TEXT: In earlier work of the authors (Ref.1) it was shown that the effect of excess layers of solid organic lubricants on the characteristics of friction consists to a considerable extent in the separation of the rubbing surfaces. However, this does not exclude the effect of adsorption plastification (Ref.2), the magnitude of which should manifest itself to an increasing extent with a decrease in the thickness of the lubricant film. In addition to elucidating the role of adsorption plastification, it was considered of interest to verify what film thickness of the lubricant corresponds to a maximum effect of reducing friction. For this purpose the effect of monomolecular layers of such surface active lubricants as stearic acid and cetyl alcohol on the friction of a rubbing pair, copper-high speed steel, was investigated on an instrument, a schematic sketch of which is

shown in Fig.1. After depositing a certain number of molecular layers and subsequent drying, copper specimens 1 were placed on a flat support which was fitted into a dynamometer vice which could be moved at a speed of 10 cm/min. On to the moving specimen a high speed steel semi-spherical slide rod 2 with a curvature radius of 6 mm was pressed with a load of 25 kg. The friction force was measured by the indicator 3. The mono-molecular layers were deposited onto the specimen by means of the method of K. Blodgett (Ref.3) from the surface of a weakly alkaline aqueous solution, pH $\approx$ 8. Preliminarily the specimen was cleaned with an abrasive and washed several times with cryoscopically pure benzol. The friction coefficient for high speed steel along such a specimen is 0.35. In the case of sliding of the slide rod along an extremely pure copper surface obtained directly after cutting of a very fine chip, the coefficient of friction equalled 1.2 to 13. An odd number of monolayers of stearic acid and barium stearate were deposited onto the metallic surface. Data on the influence of the number of monolayers on the friction coefficient are plotted in Fig.2 (friction coefficient μ vs. number of molecular layers n). The results indicate that from a

thickness of 15 to 17 layers of lubricant film, an almost maximum decrease is observed in the friction coefficient, which hardly changes with a further increase of the film thickness. This justifies the assumption that films of stearic acid of a thickness of 15 to 17 layers are sufficiently strong to withstand normal loads and to ensure perfect separation of the rubbing surfaces. Calculations show that for a friction coefficient μ between 0.08 and 0.1 the degree of screening of the copper surface that is lubricated with a film of stearic acid is approximately 90%. Equal results were obtained for cetyl alcohol. Thereby, the limit value of the friction coefficient proved to be independent of the nature of the polar group of the lubricant molecules. In friction experiments with rough machined surfaces (V. M. Korbut. DAN SSSR, 124, No.1, 1959) no lubrication effect was observed for monolayers of stearic acid; a lubrication effect manifested itself from a thickness of the lubricant film of five layers onwards. According to Korbut this is due to the fact that in the case of rough machining of rubbing pairs the nominal geometrical surface on which the lubricant layer is deposited differs greatly from the real surface forming the friction forces. There are 2 figures,

Investigation of the Lubrication.... S/139/61/000/001/017/018
E073/E535

1 table and 4 references: 3 Soviet and 1 non-Soviet.
(Note: This is virtually a complete translation)

ASSOCIATION: Institut fizicheskoy khimii AN SSSR
(Institute of Physical Chemistry, AS, USSR)

SUBMITTED: June 13, 1960

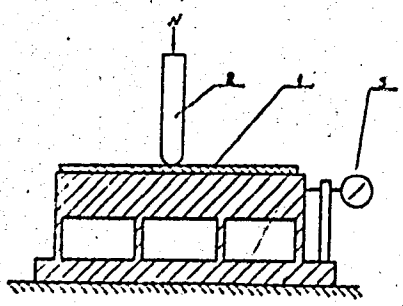


Fig.1

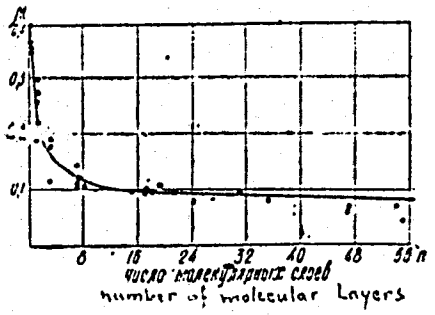


Fig.2

Card 4/4

ROSTOVTSEV, N.M.; YEPIFANOV, G.I.; ZHADIN, N.P.

Role of cavitation in the ultrasonic treatment of materials.
Izv.vys.ucheb.zav.; fiz. no.4:157-162 '61. (MIRA 14:10)

1. Orlovskiy pedagogicheskiy institut i Institut fizicheskoy khimii AN SSSR.
(Cavitation) (Ultrasonic testing)

SANZHAROVSKIY, A.T.; YEPIFANOV, G.I.

Internal stresses in coatings. Part 4: Normal internal stresses in nitrocellulose films. Vysokom.soed. 3 no.11: 1641-1643 N '61. (MIRA 14:11)

1. Institut fizicheskoy khimii AN SSSR.
(Nitrocellulose)
(Strains and stresses)

S/020/61/136/004/011/026
B019/B056

AUTHORS: Rostovtsev, N. M. and Yepifanov, G. I.

TITLE: Effect of Mechanical Properties of Solids Upon the Rate of Their Ultrasonic Treatment

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 4, pp. 807 - 809

TEXT: In the introduction, the authors define the ultrasonic treatment of solids as a dispersion process, in which the molecular binding forces are overcome, and new free surfaces are produced. In addition, details of ultrasonic treatment are discussed in the introduction. The experiments, which are the subject of the present paper, were carried out with boron carbide suspensions in water at 17.5 kc/sec, a vibration amplitude of $A = 24\mu$, and a contact pressure of the ultrasonic device of 2 kg. In the first series of tests, the working rates of pure lead, aluminum, iron, copper, zinc, antimony, and glass are determined. From these results it follows that the working rates of materials being subjected to a considerable cross-section contraction on the fractured surface of the

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tearing test are low (5-9 mg/min). The lower the cross-section contraction, the higher the working rate which, in the case of glass and antimony, attained a maximum. Although the tensile strength and the microhardness of lead is considerably lower than that of antimony, the working rate of antimony is nearly a hundred times as high as that of lead. In a second series of tests, the working rate of the lead-antimony alloy was studied as a function of its composition. These results confirm the above-mentioned opinion that the working rate of a material is the higher, the more brittle is the material. There are 1 figure, 2 tables, and 4 references: 3 Soviet and 1 US.

ASSOCIATION: Orlovskiy gosudarstvennyy pedagogicheskiy institut (Orlov State Pedagogical Institute)

PRESENTED: July 21, 1960, by P. A. Rebinder, Academician

SUBMITTED: July 14, 1960

21564

S/020/61/137/003/013/030
B104/B214

1.1110 also 1063,1160

AUTHORS: Rostovtsev, N. M. and Yepifanov, G. I.

TITLE: The effect of surface-active media on the rate of supersonic treating of solids

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 3, 1961, 568-571

TEXT: An investigation was made of the dependence of the effect of active media in supersonic treating of solids on the media's mechanical properties in optimum concentration of sodium oleate in water; and oleic acid, and palmitic acid in benzene. The following substances were studied: a number of pure metals (Cu, Al, Fe, Pb, Zn, Sb), antimony-lead alloys, and carbon steel. The supersonic instrument carried out oscillations with a frequency of 17.5 kcps, amplitude 24 μ and surface pressure 2 kg. The cylindrical instrument had a diameter of 5 mm and was made of unhardened steel. The specimen was introduced in a special cuvette in which 0.5 cm^3 of the solution to be studied was poured, and 150 mg of boron carbide powder with grain size 120 was added. The experiments were carried out at 18-20°C. The results are collected in Tables 1-3. It is seen that

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The effect of surface-active ...

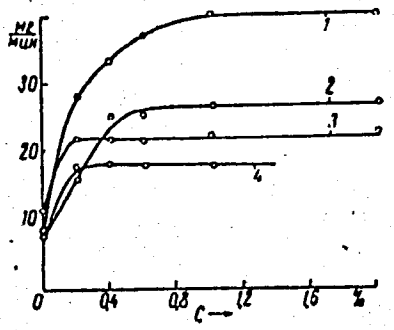
the surface active additions affect mostly the hardened materials (Cu, Al, and Fe). Special reference is made to the slowed treating of lead caused by surface active media. From a discussion of the results it is concluded that the organic media are effective only in the treating of plastics and strengthened metals in which a marked brittleness is found. In metals with low recrystallization point the effectiveness of these media is small. Further experiments confirmed the long known strong dependence of the effect of surface active substances on their concentration. The results are shown in Figs. 1 and 2. Fig. 1 shows the machined material per minute (mg/min) as a function of the concentration and a clearly marked limiting value is seen. Fig. 2 shows the rate of treating as a function of the hydrostatic pressure; it is concluded from this that addition of surface active substances has no effect on the volume of the cavities formed under the instrument. There are 2 figures, 3 tables, and 7 Soviet-bloc references.

ASSOCIATION: Orlovskiy gosudarstvennyy pedagogicheskiy institut
(Orlov State Pedagogical Institute)

The effect of surface-activ ...

PRESENTED: September 26, 1960, by P. A. Rebinder, Academician

SUBMITTED: September 12, 1960



Legend to Fig. 1: Rate of supersonic machining as a function of the concentration of sodium oleate in water. 1) Cu. 2) Fe. 3) Zinc. 4) Lead.

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21564
S/020/61/137/003/013/030
B104/B214

Fig. 2: Effect of the external hydrostatic pressure on the rate of machining of Cu. Legend: 1) Boron carbide suspension in pure water (v_o). 2) The same with 1% sodium oleate. 3) The ratio v/v_o.

Fig. 2

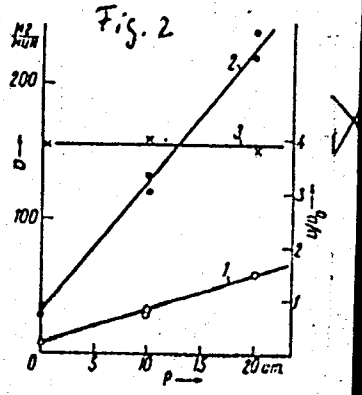

Table 1 5

	Алюминий	Медь	Железо	Свинец	Цинк	Сурьма	Стекло
2 1% раств. олеата натрия в воде	—	350	210	120	00	0	0
3 2% раств. олеинов. кислоты в бензине	170	100	70	—100	0	0	0
4 2% раств. пальмитин. кислоты в бензине	170	100	00	—100	0	0	0

Legend to Table 1: 1) Effective action (%) of surface active media in supersonic treating of solid bodies. 2) 1% sodium oleate in water. 3) 2% oleic acid in benzene. 4) 2% palmitic acid in benzene. 5) From left to right: Al, Cu, Fe, Pb, Zn, Sb, Glass.

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The effect of surface-active ...

21504
S/020/61/137/003/013/030
B104/B214

Table 2: Effectiveness of the action of a 1% solution of sodium oleate in water in supersonic machining of Pb-Sb alloy. Legend: 1) Effect in %. 2) Amount of Sb in the alloy

Таблица 2

Эффективность действия 1% раствора олеата натрия в поле при ультразвуковой обработке сплавов свинец—сурьма

1	2 Содержание сурьмы в сплаве (%)						
	0	13	20	40	60	80	100
Эффективность действия (%)	120	90	65	50	30	15	0

Table 3: Effectiveness of the action of a 1% solution of sodium oleate in water in supersonic machining of steels. Legend: 1) Effectiveness of the action in %. 2) Industrially pure iron. 3) У-8 (U-8) steel, unhardened. 4) U-8 steel hardened.

Table 3	2 Техн. чист. железо	3 Сталь У-8 незакален.	4 Сталь У-8 закален.
1 Эффективность действия (%)	230	60	30

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32226

S/139/61/000/004/021/023
E194/E135

1.1110

AUTHORS: Rostovtsev, N.M., Yepifanov, G.I., and Zhadin, N.P.

TITLE: An investigation of the role of cavitation during ultrasonic working of materials

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika. no. 4, 1961. 157-162

TEXT: Differences of opinion exist about the role of cavitation in the ultrasonic machining of materials. Some authors consider cavitation to have an important positive effect but the present authors think that it has a negative effect, and the work here described was carried out to study the point. A series of tests was run with the application of pressures up to 50 atm to reduce cavitation. The amplitude of oscillation of the tool was observed through a measuring microscope. The materials worked were brittle glass and plastic aluminium pressed to the tool with a force of about 2 kg. The tool was a 5-mm diameter cylinder of grade У-8 (U-8) steel working in suspensions of boron carbide in water, ethanol and a saturated solution of sodium chloride in water at a temperature of about 20 °C. The tests were made at a

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E194/E135

An investigation of the role of ....

frequency of 17 kc/s and an amplitude of 6 microns. The working was assessed by the loss of weight of the sample. Glass samples were worked for two minutes, and aluminium for 3.5 minutes. If cavitation played a positive part, increasing the pressure would reduce the amount of material removed by reducing cavitation. In fact, the opposite was observed and in each case the amount of material used rose steadily with pressure until a certain limit value was reached beyond which no further increase occurred. The pressure at which this occurred was calculated to be equal to the pressure required to suppress cavitation. Tests were then made at reduced pressure, with the object of increasing the cavitation at the frequencies of 17 and 9.5 kc/s and amplitudes ranging from 4.7 to 8.4 microns: the temperature was maintained at 20 °C and vacuum was applied to the vessel. In all cases reduction of the pressure caused a linear reduction in the amount of material removed, which supports the view that cavitation has a negative effect. The influence of temperature was then studied on the principle that as the material neared its boiling point cavitation would increase. These tests were made at a pressure of

An investigation of the role of.... S/139/61/000/004/021/023
E194/E135

1 atm and a frequency of 9.5 kc/s with an amplitude of 8 microns. In the case of water and benzene the rate of working first rises and then reaches a maximum at a temperature of 55 °C for water and 35 °C for benzene, and then falls sharply as the boiling point is reached. In the case of ether (boiling point 34.5 °C) the rate of working decreases rapidly as the temperature is raised. The rising part of the curves for water and benzene is attributed to reduction of viscosity at a temperature range where there is little change in vapour pressure; the subsequent fall is attributed to increase in vapour pressure promoting cavitation. A further series of tests was run in which both the pressure and temperature were varied simultaneously so as to maintain constant the difference between the hydrostatic pressure of the fluid and the vapour pressure at the given temperature. Under these circumstances the rising part of the curve for water is the same as before but there is no dropping off as the boiling point is reached; the curve continues to rise, presumably because cavitation is suppressed by the increasing pressure. It is concluded that cavitation clearly has a negative effect on

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An investigation of the role of .....

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E194/E135

ultrasonic machining of metal and that, for any given fluid at atmospheric pressure, there is an optimum working temperature. There are 4 figures and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc. The English language reference reads as follows: Ref.8: E.A. Neppiras. Metalworking production, V.100, No.30, 1956.

ASSOCIATION: Orlovskiy pedagogicheskiy institut
(The Orlov Pedagogical Institute)

Institut fizicheskoy khimii AN SSSR
(Institute of Physical Chemistry, AS USSR)

SUBMITTED: June 13, 1960

X

Card 4/4

32845
S/020/62/142/002/026/029
B101/B144

15.8510

AUTHORS: Sanzharovskiy, A. T., and Yepifanov, G. I.

TITLE: Study of the formation of mechanical properties of polymer coatings and of internal stresses in them

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 2, 1962, 403 - 406

TEXT: The change in mechanical properties of gelatin films and their shrinkage during drying have been investigated. From experimental data, the following equation was derived for the increase $\Delta\sigma$ of internal stress during the drying time t: $\Delta\sigma = [\varepsilon_{shr} - \Delta t\,(\sigma - \sigma_0)/2\eta]/[1/E_1 + 1/E_2(1-\exp(-\Delta t/\theta))]$ (5), where ε_{shr} is the linear shrinkage, σ is the normal internal stress, σ_0 is the yield stress, η is the viscosity, E_1 is the modulus of instantaneous deformation, E_2 is the equilibrium modulus of high-elastic deformation, and θ is the relaxation period. For $\Delta t \to \infty$, $\Delta\sigma = 0$; for $\Delta t \to 0$ (instantaneous drying), $\Delta\sigma$ reaches the limit: $\Delta\sigma_{lim} = \Delta\varepsilon_{shr} E_1$.

Card 1/3

$\Delta\varepsilon_{shr}$, E_1, and the apparent modulus E_a of gelatin gels of different concentrations were determined experimentally. Result: ε_{shr} increases with decreasing water content U of the gels, and reaches the value ~2 with air-dry films (14-13% H_2O). E_1 increases with decreasing U (from 90 to 30%) by 180 times, but remains low (~70 kgf/cm^2). With further decreasing U, E_1 rises steeply, and reaches $4.2\text{-}4.5\cdot10^4$ kgf/cm^2 with air-dry gelatin. σ_{lim} was calculated from $\varepsilon_{shr} = f(U)$, $E_1 = f(U)$. Between 90-30% U, σ_{lim} was ~7 kgf/cm^2. Below 20% U, vitrification sets in, and σ_{lim} reaches a value of the order of 500 kgf/cm^2. From $E_a = f(U)$ it was found that between 90-40% U the high-elastic deformation is about 25-30% of E_1. Between 40-20% U, E_a becomes much less than E_1. Calculation of σ by Eq. (5) furnished 350-400 kgf/cm^2 for air-dry samples, while experimental data yielded

Study of the formation of mechanical...

270-300 kgf/cm^2. The agreement between calculation and experiment could still be improved by allowing for plane stress. Summing up: (1) The concentration of the initial solution affects σ only slightly. (2) The experiments have confirmed that σ is independent of the film thickness as shown by Eq. (5): pure gelatin, 280 kgf/cm^2 at 0.04 mm and 0.2 mm film thickness; polyester varnish, 3.3.-3.0 kgf/cm^2 at 0.10 and 0.75 mm. This is attributed to the occurrence of vitrification. For plasticized gelatin, high-elastic deformation and viscous flow are, however, maintained up to the air-dry state, and σ drops from 80 kgf/cm^2 at 0.04 mm to 30 kgf/cm^2 at 0.26 mm. Academician P. A. Rebinder and Professors G. M. Bartenev and P. I. Zubov are thanked for advice. There are 3 figures, 1 table, and 3 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

PRESENTED: July 13, 1961 by P. A. Rebinder, Academician

SUBMITTED: June 26, 1961

Card 3/3

SANZHAROVSKIY, A.T.; YEPIFANOV, G.I.; LOMAKIN, A.T.

Internal stresses in polymer coatings. Lakokras.mat.i ikh prim. no.3:21-31 '62. (MIRA 15:7)
(Protective coatings--Testing)
(Strains and stresses)

Z/011/62/019/010/002/009
E112/E435

AUTHORS: Sanzharovskiy, A.T., Yepifanov, G.I., Lomakin, A.T.

TITLE: Internal stresses in surface coatings with polymers

PERIODICAL: Chemie a chemická technologie. Přehled technické a hospodářské literatury, v.19, no.10, 1962, 465, abstract Ch 62 6281. (Lakokras. Materialy, no.3, 1962, 21-31)

TEXT: Studies of internal stresses in coatings and paints made from polymers showed that they were caused by shrinkage taking place during drying and hardening. If the properties of the primer were without effect on the hardening mechanism, the characteristics of the primer would have no effect on the internal stresses. The latter decreased as the thickness of the surface coats and paints increased. Plasticizers lower considerably the modulus of elasticity of the coats and cause a reduction of the limit value of the internal stresses.
3 sketches, 19 diagrams, 1 table, 7 literature references.

[Abstracter's note: Complete translation.]

Card 1/1

YEPIFANOV, G.I.; SANZHAROVSKIY, A.T.

Investigating the effective friction area. Tren.i izn.mash. no.15:254-273 '62. (MIRA 15:4)
(Friction)

L 2614-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6013476 (A) SOURCE CODE: UR/0374/66/000/002/0290/0292

AUTHOR: Sanzharovskiy (Jr.), A. T.; Yepifanov, G. I.

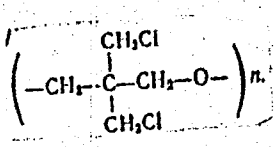
ORG: Moscow Institute of Electronic Machine Building (Moskovskiy institut elektronnogo mashinostroyeniya)

TITLE: Study of the structure of physicomechanical properties of pentone

SOURCE: Mekhanika polimerov, no. 2, 1966, 290-292

TOPIC TAGS: polymer structure, amorphous polymer, crystalline polymer, solid physical property, solid mechanical property

ABSTRACT: The structure and physicomechanical properties of pentone,



were studied on 0.3-0.4 mm films formed from melts of the polymer on metal substrates. X-ray structural analysis and an MIN-8 polarization microscope showed films cooled in liquid nitrogen to be amorphous and those cooled slowly in a furnace to be coarsely

UDC: 678:541.68.3

Card 1/2

L 26142-66

ACC NR: AP6013476

2

crystalline. Variations in elastic modulus with temperature are interpreted in terms of the structural changes in the pentone film. As the size of spherulites decreases, the strength and elongation at rupture increase. At subzero temperatures, the rupture of the films is brittle; as the temperature rises, it becomes highly elastic. A temperature rise from -60 to +100°C causes an increase in elongation at rupture from 2.5 to 300%; at the same time, the tensile strength goes through a maximum at -20°C. The specific wear of pentone films was found to be practically independent of the size of spherulites. Orig. art. has: 7 figures.

SUB CODE: 07/ SUBM DATE: 12Jul65/ ORIG REF: 004/ OTH REF: 000

Card 2/2

YEpifanov, G. V.

Epifanov, G. V. On the density of two-dimensional polyhedra. Dokl. Akad. Nauk SSSR (N.S.) 101 (1955) [illegible] I - F/W

[illegible] Russian.

Boltyanskii (same Dokl. (N.S.) 75 (1950), 605–608; MR 13, 149 [illegible] defined the density of a space and showed that the [illegible] of a two-dimensional compactum is [illegible] [illegible] Proc. London Math. Soc. (3) 3 (1953) [illegible] [illegible]

either a pseudomanifold with non-empty boundary or one [illegible]

YEPIFANOV, G.V.

Reduction of a plane graph to an edge by star - triangle transformations. Dokl. AN SSSR 166 no.1:19-22 Ja '66. (MIRA 19:1)

1. Leningradskoye otdeleniye Matematicheskogo instituta im. V.A.Steklova AN SSSR. Submitted June 2, 1965.

BEDENKO, T.; YEPIFANOV, I.

Traffic organization and safety. Avt. transp. 42 no.9:46-48 S '64.
(MIRA 17:11)

YEPIFANOV, K.I.

Significance and development of school farms for training and experimentation. Politekh. obuch. no.8:21-27 Ag '59. (MIRA 12:10)

1. Ryazanskiy oblastnoy institut usovershenstvovaniya uchiteley.
(Ryazan Province--Agriculture--Study and teaching)

YEPIFANOV, K.P., tokar'

Mandrel with a disk cutter. Mashinostroitel' no.7:20 Jl '63.
(MIRA 16:9)

(Metal-cutting tools)

YEPIFANOV, L.

Thirty percent cheaper. Stroitel', no.7:11 Jl '61. (MIRA 14:8)

(Wood-working machinery)

YEPIFANOV, M.

Training of personnel by correspondence. Prom. koop. 13 no.4:33 Ap '59. (MIRA 12:6)

1.Direktor Vsesoyuznogo zaochnogo tekhnikuma promkooperatsii, Moskva.

(Correspondence schools and courses)

SHILIN, S., PETRUKHIN, I., YEPIFANOV, M. and FILATOV, A. (Reviewers)

"A valuable handbook - Mozgov, I.E. "Farmakologiya" [Pharmacology]. M., Sel'khozgiz, 1961. 3rd revised and enlarged edition..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 87

YEPIFANOV, M.I.

Karstic-denudational relief forms of the central and eastern parts of Ustyurt Upland. Izv. AN SSSR. Ser. geog. no.3:94-101 My-Je '65. (MIRA 18:6)

GOL'TS, S.I.; YEFIFANOV, M.I.

Karst troughs of the central and eastern Ustyurt. Trudy MOIP 15:62-66 '65. (MIRA 18:9)

YEPIFANOV, M.I.

Aral Sea terraces. Trudy SOPK no.2:164-169 '61. (MIRA 14:11)
(Aral Sea--Terraces (Geology))

VEYTSMAN, N.R., prof.; VENETSKIY, I.G., dots.; ZHUKOV, F.N., dots.; MUKHIN, A.F., dots.; YEPIFANOV, M.P., red.; YERKHOVA, Ye.A., tekhn. red.

[Principles of studying balance sheets and statistics]Osnovy balansovedeniia i statistiki; uchebnoe posobie. Pod red. N.R.Veitsmana. Moskva, Izd-vo IMO, 1962. 261 p. (MIRA 15:12)

(Accounting) (Statistics)

BLISHCHENKO, I.P.; BOCHAROV, I.N.; GLUSHAKOV, P.I.; MIRONOV, V.S.; NIKOL'SKIY, M.M.; NIKOL'SKIY, M.M.; PUCHKOV, I.A.; CHERNIKOV, G.P.; SHCHETININ, V.D.; ZEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn.red.

[Africa 1960: concise reference book; territory, population, economy, governmental system, foreign policy] Afrika 1960; kratkii spravochnik. Territoriia, naselenie, ekonomika, gosudarstvennyi stroi, vneshniaia politika. Moskva, Izd-vo In-ta mezhdunarodnykh otnoshenii, 1960. 133 p.

(MIRA 14:3)

(Africa)

YEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn.red.

[The 15th anniversary of free Czechoslovakia] 15 let svobodnoi Chekhoslovakii. Moskva, Izd-vo IMO, 1960. 192 p. (MIRA 13:8)

1. Moscow. Institut mezhdunarodnykh otnosheniy.
(Czechoslovakia--Economic conditions)

YEPIFANOV, M.P., red.; ROMANOVA, M.I., tekhn.red.

[Problems of foreign trade] Voprosy vneshnei torgovli. Moskva, Izd-vo IMO, 1960. 195 p. (MIRA 13:4)

1. Moscow. Institut mezhdunarodnykh otnosheniy.
(Commerce)

KHMEL'NITSKAYA, Yelizaveta Leonidovna; SHCHETININ, V.D., red.; YEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn.red.

[Monopolistic capitalism in West Germany] Monopolisticheskii kapitalizm Zapadnoi Germanii. Moskva, Izd-vo IMO, 1959. 353 p. (MIRA 13:4)
(Germany, West--Economic conditions)

YEFIFANOV, M.P., red.; ROMANOVA, N.I., tekhn.red.

[Fifteen years of the Democratic Republic of Vietnam] 15 let Demokraticheskoi Respubliki V'etnam. Moskva, Izd-vo IMO, 1960. 145 p. (MIRA 13:7)

1. Moscow. Institut mezhdunarodnykh otnosheniy.
(Vietnam, North--Economic conditions)
(Vietnam, North--Politics and government)

BOBRAKOV, Yuriy Ivanovich; BUGROV, Yevgeniy Vladimirovich; YEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn. red.

[Economy of the U.S.A. is in a labyrinth of contradictions] Ekonomika SShA v labirinte protivorechii. Moskva, Izd-vo In-ta mezhdunarodnykh otnoshenii, 1961. 50 p. (MIRA 14:8)
(United States--Economic conditions)

SYSOYEV, Nikolay Grigor'yevich; SENTYULEVA, Appolinariya Andreyevna; YEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn. red.

[Possibilities and reality of comprehensive European economic cooperation] Obshcheevropeiskoe ekonomicheskoe sotrudnichestvo; vozmozhnosti i deistvitel'nost'. Moskva, Izd-vo In-ta mezhdunarodnykh otnoshenii, 1961. 78 p. (MIRA 14:10)
(Europe--International cooperation)

BOL'SHAKOVA, Inna Ivanovna; YEP'IFANOV, M.P., red.; ROMANOVA, N.I., tekhn. red.

[The road of national independence] Dorogoi nezvisimosti. Moskva, Izd-vo IMO, 1961. 83 p. (MIRA 14:9)
(India—Economic conditions)

SHEVCHENKO, Vasiliy Stepanovich; SVETLOVA, Anna Nikolayevna; LOPATIN, G.S., prof., doktor ekonom. nauk, red.; YEPIFANOV, M.P., red.; ROMANOVA, N.I., tekhn. red.

[Forereign trade correspondence and documentation; textbook] Vneshnetorgovaia korrespondentsiia i dokumentatsiia; uchebnoe posobie. Pod red. G.S.Lopatina. Moskva, Izd-vo IMO, 1961. 203 p. (MIRA 14:12)
(Russia—Commerce)

SELEZNEV, Leonid Ivanovich; YEPIFANOV, M.P., red.; YERKHOVA, Ye.A., tekhn. red.

[International economic relations of Czechoslovakia] Mezhdunarodnye ekonomicheskie otnosheniia Chekhoslovakii. Moskva, Izd-vo mezhdunarodnykh otnoshenii, 1962. 127 p. (MIRA 15:5)

(Czechoslovakia--Foreign economic relations)
(Czechoslovakia--Industries)

POPOV, Valeriy Dmitriyevich; LYUBIMOV, N.N., prof., doktor ekon. nauk, red.; YEPIFANOV, M.P., red.; YERKHOVA, Ye.A., tekhn. red.

[The economy of Greece] Ekonomika Gretsii. Pod red. N.N. Liubimova. Moskva, Izd-vo IMO, 1962. 205 p. (MIRA 15:5)
(Greece--Economic conditions) (Greece--Commerce)

SHERESHEVSKIY, M.G., prof.; VAGANOV, B.S., dots.; VORONOV, K.G., dots.; ROZENBERG, M.G.; ZLOTNIKOV, A.L., dots.[deceased]; GRYAZNOV, E.A.; GORYUNOV, F.A.; NETRUSOV, A.A., kand. ekon. nauk; YEPIFANOV, M.P., red.; YERKHOVA, Ye.A., tekhn. red.

[redacted]

[Organization and technique of the foreign trade of the U.S.S.R. and other socialist countries]Organizatsiia i tekhnika vneshnei torgovli SSSR i drugikh sotsialisticheskikh stran; uchebnoe posobie pod red. B.S.Vaganova. Moskva, 1963. 343 p. (MIRA 16:9)

1. Moscow. Institut mezhdunarodnykh otnosheniy.
(Communist countries--Commerce)
(Russia--Commerce)

ACCESSION NR: AP4032872 S/0051/64/016/004/0677/0683

AUTHOR: Tolstoy, N.A.; Yopifanov, M.V.

TITLE: Shape of light pulses from a flash tube

SOURCE: Optika i spektroskopiya, v.16, no.4, 1964, 677-683

TOPIC TAGS: flash lamp, flash tube pulse, light impulse, flash tube pulse cutoff, taumeter, taumeter circuitry

ABSTRACT: Flash tubes are now successfully employed in conjunction with pulse taumeters; the use of the flash-pulse technique has made it feasible to advance from measurement of integral luminescence lifetimes to measurement of the duration of individual relaxation processes. However, the pulse taumeter technique, as compared with the ordinary taumeter procedure, has two related shortcomings which stem from the fact that the exciting pulses are not square and the fact that the trailing edge of the light pulse is longer than the leading edge. The last reduces the time-sensitivity of the pulse taumeter measurements. Accordingly, the authors propose a method for enhancing the time sensitivity by shortening the trailing edge of the light pulses from the flash tube. This is based on the assumption that the rise and fall

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ACCESSION NR: AP4032872

are both exponential, and is realized in practice by modification of the flash tube supply (discharge) circuit to provide for sharp cutoff of the current to the tube. The circuit used by the authors with an IFK-120 infrared flash tube is diagramed. The shapes of the light pulses yielded by the tube under different supply conditions are shown in figures. An analytic expression for the pulse shape is also adduced. Orig.art.has: 7 formulas, 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 25Jan63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: OP, EE NR REF SOV: 004 OTHER: 000

Card 2/2

OKSMAN, Ya.A.; YEPIFANOV, M.V.

Sluggishness of "vidicon" photoconductive pickup tubes. Radiotek. i elektron. 3 no.12:1501-1515 D '58. (MIRA 11:12)
(Television--Equipment and supplies)

TOLSTOY, N.A.; TKACHUK, A.M.; SOKOLOV, V.A.; BUHLAKOV, A.V.; RYSKIN, A.I.; MANSUROVA, Z.S.; YEPIFANOV, M.V.

Flare-up of ZnS phosphors and concurrence of the luminescence bands. Izv.AN SSSR. Ser. fiz. 25 no.3:399-405 Mr '61. (MIRA 14:2)
(Zinc sulfide spectra)

39873
S/051/62/013/002/013/014
E032/E514

24,3100

AUTHORS: Tolstoy, N.A. and Yepifanov, M.V.

TITLE: A multilamp source of modulated light for a pulse taumeter

PERIODICAL: Optika i spektroskopiya, v.13, no.2, 1962, 291-294

TEXT: The authors describe a multilamp modulator. Sixty pulsed lamps of type ИФК-120 (IFK-120) are arranged on the periphery of a disc which revolves with an angular velocity of 10 r.p.m. Each lamp gives rise to a flash each time it passes through the focus of the parabolic quartz condenser. This is equivalent to a source of light producing 10 pulses/sec. Each of the lamps remains inactive for 6 sec after producing the flash, which corresponds to the normal single-shot operating conditions. The lamps are fired by discharging 1300 μF capacitors through them, the capacitors being charged by a germanium rectifier to 300 V each. The capacitors rotate together with the lamps and contact is made through special brushes. Provision is made for the adjustment of the "phase" of the rotating disc, i.e. the position

Card 1/2

A multilamp source of ... S/051/62/013/002/013/014
E032/E514

of the lamps relative to the optical axis of the condenser. There are 2 figures.

SUBMITTED: March 6, 1962

Card 2/2

TOLSTOY, N.A.; YEPIFANOV, M.V.

Shape of the light pulse emitted by a flash lamp. Opt. i spektr. 16 no. 4:677-683 Ap '64. (MIRA 17:5)

KATSEV, P.G.; YEPIFANOV, N.P.; DENISOV, P.S., inzh., retsenzent; MALEVSKIY, N.P., inzh., red.; GARANKINA, S.P., red.izd-va; TIKHANOV, A.Ya., tekhn. red.

[Manual for broaching-machine operators] Spravochnik protiazhnika. Moskva, Mashgiz, 1963. 254 p. (MIRA 16:7)
(Broaching machines)

YEPIFANOV, N. S.

1685. Povtornyye Operatsii Na Zheludke Pri Yazvennoy Bolezni Po Materialv Kirovskoy Oblastnoy Bol'nitsy. Kirov, 1954, 12s. 20sm. (M-VO Zdravookhraneniya SSSR. Tsentr. In-T Usovershenstvovaniya Vrachey). 100 EKZ. B. TS.-(54-51562)

SO: Knizhnaya Letopis', Vol. 1, 1955

YEPIFANOV, N.S., kandidat meditsinskikh nauk

Peptic ulcers following posterior gastroenterostomy. Vest.khir. 76 no.10:50-54 N '55. (MLRA 9:1)

1. Iz khirurgicheskogo otdeleniya (zav.--N.S.Yepifanov) Kirovskoy oblastnoy bol'nitsy

(PEPTIC ULCER, etiol. and pathogen.
gastroenterostomy)
(STOMACH, surg.
gastroenterostomy, causing peptic ulcer)

YEPIFANOV, N.S. (Kirov (Oblastnoy), ul. Derendyayeva, 1, kv.10)

Combined ulcer and cancer of stomach [with summary in English]
Vop.onk. 2 no.2:230-232 '56. (MLRA 10:3)

1. Iz khirurgicheskogo otdeleniya (zav. - N.S.Yepifanov) Kirovskoy oblastnoy bol'nitsy (glavn. vrach - N.K.Popov)
(STOMACH, neoplasms
with peptic ulcer)
(PEPTIC ULCER, compl.
cancer of stomach)

YEPIFANOV, N.S., kandidat meditsinskikh nauk

Invagination of the small intestine through a gastroenteroanastomosis. Vrach. delo no.1:95 Ja '57 (MLRA 10:4)

1. Khirurgicheskoye otdeleniye (zav.-N.S. Yepifanov) Kirovskoy oblastnoy bol'nitsy.
(INTESTINES--INTUSSUSCEPTION)

Yefimanov, N.S.

YEFIFANOV, N.S.

Penetration of peptic ulcers into the anterior abdominal wall. (MIRA 11:2)
Sov.med. 21 Supplement:22 '57.

1. Iz khirurgicheskogo otdeleniya Kirovskoy oblastnoy bol'nitsy.
(PEPTIC ULCER)

YEPIFANOV, N.S. (g. Kirov (obl.), ul. Derendyayeva, d.8, kv.10)

Gastric cancer in patients with perforated ulcer [with summary in English]. Vop.onk. 4 no.3:316-321 '58 (MIRA 11:8)

1. Iz khirurgicheskogo otdeleniya (zav. - N.S. Yepifanov) Kirovskoy oblastnoy bol'nitsy (glavn.vrach - zasluzhennyy vrach RSFSR N.K. Popov).
(PEPTIC ULCER, PERFORATION,
with cancer (Rus))
(STOMACH NEOPLASMS, case reports,
after peptic ulcer perf. (Rus))

YEPIFANOV, N.S., kand.med.nauk (Kirov)

Surgical technics in perforated gastric and duodenal ulcers; material obtained from leading Russian Federation surgeons. Sov.med. 22 no.7:61-66 Jl '58 (MIRA 11:10)

(PEPTIC ULCER, perforation, surg. technics (Rus))

YEPIFANOV, N.S., kand.med.nauk

Critical evaluation of the non-surgical method for treating perforated ulcers of the stomach and duodenum; survey of foreign literature. [with summary in English] Khirurgiia 34 no.5:137-140 My '58 (MIRA 11:7)

1. Iz khirurgicheskogo otdeleniya (zav. N.S.Yepifanov) Kirovskoy oblastnoy bol'nitsy (glavnyy vrach - zaslyzhenyy vrach RSFSR N.K. Popov).
(PEPTIC ULCER, therapy
non-surg. method for perforated ulcers, evaluation (Rus))

EXCERPTA MEDICA Sec 9 Vol 13/4 Surgery Apr 59

1935. RECURRENT PERFORATIONS OF GASTRIC AND DUODENAL ULCERS (Russian text) - Epifanov N. S. - VESTN. KHIR. 1958, 80/1 (44-49 and 157) Tables 1

Case histories of 22 men and 1 woman with recurrent perforation of gastric and duodenal ulcer are reviewed. The percentage of recurrence among the patients with perforated ulcers treated previously was 1.5 and occurred in the majority of cases in 1-3 years after operation. The recurrence was more often encountered in younger patients. In such cases gastric resection is indicated. If a simple suturing is again resorted to the patient ought to be under careful supervision and in case of renewed ulcer symptoms a resection has to be done. In 9 cases of repeated perforation resection yielded uniformly good results.

Surgery Dept,
Kirovskoy oblastnoy bol'nitsy

Cand Med Sci

YEPIFANOV, N.S.

Out-of-town session in Kirov of the Gorkiy Institute of Traumatology and Orthopedia. Zdrav.Ros.Fed. 3 no.10:44 O '59. (MIRA 13:1)
(ORTHOPEDIA)

YEPIFANOV, N.S.; MYSHKINA, P.S. (Kirov)

Surgical care of workers in logging industries. Zdrav.Ros.Fed. 3 no.10:30-32 O '59. (MIRA 13:1)
(KIROV PROVINCE--LUMBERMEN--MEDICAL CARE)

YEPIFANOV, N.S., zasluzhennyy vrach RSFSR, doktor med.nauk

Development of surgical care in Kirov Province. Zdrav.Ros.Feder. 4 no.11:21-24 '60. (MIRA 13:11)

1. Glavnyy khirurg Kirovskogo oblzdravotdela.
(KIROV PROVINCE--SURGERY)

YEPIFANOV, N.S., kand.med.nauk

Adhesive process in the abdominal cavity following perforation of a gastric and duodenal ulcer. Kaz.med.zhur. 41 no.1:37-42 Ja-F '60. (MIRA 13:6)

1. Iz khirurgicheskogo otdeleniya (zav. - N.S. Yepifanov) Kirovskoy oblastnoy bol'nitsy (glavvrach - O.A. Yablokov).
(ABDOMEN--SURGERY) (PEPTIC ULCER)

YEPIFANOV, N.S.

Late results of resection of the stomach in patients with a history of closure of perforated ulcer. Klin. med. 38 no. 4:63-66 Ap '60. (MIRA 14:1)

(STOMACH—SURGERY) (PEPTIC ULCER)

YEPIFANOV, N.S., zasluzhennyy vrach RSFSR, doktor meditsinskikh nauk

Training of physicians on a local basis. Zdrav. Ros. Feder. 4 no.9: 34-36 S '60. (MIRA 13:9)

1. Iz Kirovskogo oblzdravotdela.
(KIROV PROVINCE—MEDICINE—STUDY AND TEACHING)

YEPIFANOV, N.S., kand.med.nauk

Frequency of perforating ulcers of the stomach and duodenum. (MIRA 15:2)
Kaz. med. zhur. no.6:25-26 N-D '61.

1. Khirurgicheskoye otdeleniye (zav. - N.S.Yepifanov) Kirovskoy oblastnoy bol'nitsy.

(PEPTIC ULCER)

YEPIFANOV, N.S., doktor med.nauk, zasluzhennyy vrach RSFSR

Benign intrapelvic tumors as an etiological factor in perineal hernias. Khirurgiia no.6:75-79 Je '61. (MIRA 14:11)

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(PERINEUM--HERNIA) (PELVIS--TUMORS)

LOVKOV, S., inzh.; YEPIFANOV, P., inzh.

Automatic photographic cameras used in wind tunnels. (MIRA 11:9)
Izobr.i rats. no.8:32 Ag '58.
(Photography, High speed)

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Deaeration of grape juice. Kons. i ov. prom. 16 no.10:20-23 O '61. (MIRA 14:11)

1. Moldavskiy nauchno-issledovatel'skiy institut pishchevoy promyshlennosti.

(Grape juice)

YEPIFANOV, P.V.; YEROFEYEV, A.A.

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(Refrigeration and refrigerating machinery)

MAMAKOV, A.A.; YEPIFANOV, P.V.; YEROFEYEV, A.A.

Testing vacuum deaerators with a jet spraying system. Trudy MHIIPP 2:87-95 '62. (MIRA 16:4)

(Vacuum apparatus—Testing)

LIPIS, B.V.; MAMAKOV, A.A.; YEPIFANOV, P.V.; Prinimali uchastiye: SPEKTOR, L.A.; LYALIKOVA, R.Yu.

Deaeration of grape juice. Trudy MNIIPP 2:81-86 '62. (MIRA 16:4)
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